

# RAE1

## RASS Temperature Profiler

Photo courtesy of Arizona State University (ASU)



The Scintec RAE1 RASS Extension upgrades any Scintec Sodar SFAS, MFAS or XFAS to allow precise measurements of temperature profiles in the atmospheric boundary layer.

Temperature is retrieved by remotely measuring the speed of sound which depends on the temperature. This is done by doppler analysis of the frequency of radiowaves which have been reflected at acoustic waves emitted by the sodar.

RASS can replace towers, tethered balloons or radiosondes at a fraction of the operational costs. Compared to

passive, thermal microwave techniques, RASS can precisely detect and locate even multiple inversions and has higher accuracy.

The Extended-Sweep Inversion technique (ESI) significantly increases the signal-to-noise ratio and allows for measurement ranges far wider than those of traditional systems.

The RAE1 is operated using the versatile software APRun with flexible configurability, extensive graphical display and output options, quality control features, statistical analysis tools and remote access support.

### FEATURES

- industry-leading accuracy
- maximum range up to 600 / 800 / 1000 m with Sodar SFAS / MFAS / XFAS
- monitors inversion heights with 5 / 10 / 20 m precision with Sodar SFAS / MFAS / XFAS
- ESI technology increases data availability
- lightweight parabolic antennas
- easy installation
- fully-automated self-test
- various remote access options

### APPLICATIONS

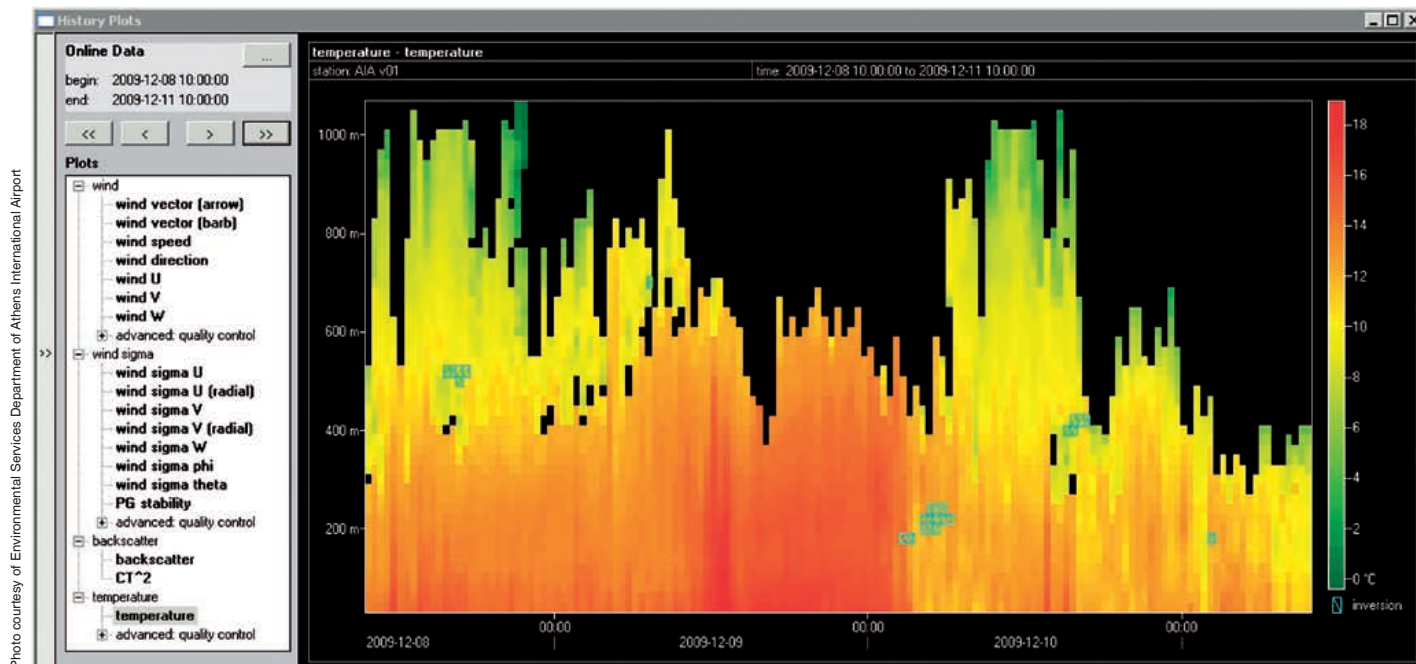
- atmospheric dispersion
- air quality
- nuclear power plant safety
- airport temperature profiling
- fog forecasting
- military
- micrometeorology
- climate change
- agrometeorology, forestry
- urban climate

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## Data output (in addition to Sodar output)

- temperature and virtual temperature
- inversion identifier
- data quality



Description	Specifications	Remarks
Radio antenna	parabolic	low wind-load construction
Radio frequency	1290 MHz	others on request
Vertical resolution	5 / 10 / 20 m with SFAS / MFAS / XFAS	depending on Sodar model
Minimum range	40 m	
Maximum range	600 / 800 / 1000 m with SFAS / MFAS / XFAS	depending on settings, environment and atmosphere
Averaging time	1 - 60 min	user-defined
Accuracy	0.2 °C	virtual temperature
Measurement range	-50 °C to +60°C	
Operating temperature	-35 to +50°C (-30 to +120 °F)	
Power requirement DC operation	+ 14 VDC, 7 A	depending on mode
Power requirement AC line operation	100 to 240 VAC, 500 W	

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Specifications are subject to change without notice.

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